



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/591,610

09/05/2006

Mario Scholz

032301.592

3091

441 7590 07/28/2011

SMITH, GAMBRELL & RUSSELL
1130 CONNECTICUT AVENUE, N.W., SUITE 1130
WASHINGTON, DC 20036

EXAMINER

SALVITTI, MICHAEL A

ART UNIT

PAPER NUMBER

1767

MAIL DATE

DELIVERY MODE

07/28/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/591,610	Applicant(s) SCHOLZ ET AL.	
	Examiner MICHAEL SALVITTI	Art Unit 1767	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 9: Claim 9 recites that the liquid silicone rubber displays viscosities of 0.01 to 200 Pas. While the specification provides support for organopolysiloxanes having this property (specification page 7, lines 20-25): **1)** the claimed silicone rubber is not limited to organopolysiloxanes (hydrogen siloxanes are also taught on page 7, lines 3-4); and **2)** liquid silicone rubbers are admitted by applicant to have a much narrower range of viscosities than those being presently claimed (specification page 6, lines 29-35).

The following is a quotation of the fourth paragraph of 35 U.S.C. 112:

Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

Claim 5 is rejected under 35 U.S.C. 112, fourth paragraph, as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s) or amend the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Regarding claim 5: Claim 5 recites the silica as having specified compacted bulk densities. This limitation fails to further limit claim 1, for the reason that claim 1 requires the silica to be in a particulate filler form, whereas claims 4 and 5 refer to a bulk property. The bulk property does not limit the particles having the required BET and DBP values.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,331,588 to *Azechi et al.* in view of US 2003/0195290 to *Scholz et al.*

Regarding claims 1-2: *Azechi* (Example 1, col. 8) teaches a silicone rubber containing an effective amount (27.6 pbw see Table 1; 40 pbw silica in 145 parts total composition) of structurally modified (col. 5, lines 10-23) hydrophobic pyrogenic (fumed) silica (*Azechi* col. 7, lines 55-67). These hydrophobic pyrogenic silicas have BET of 300

m²/g (S4; see col. 8 Table), which reads on applicant's definition of "reinforcing filler" (page 8 lines 20-35 of spec) with specificity, and are methyl-modified (e.g. hexamethyldisilazane in Example, col. 7). Of the 33 surface modifying agents disclosed by name, 7 incorporate methyl and vinyl functionality (e.g. 1,3-divinyltetramethyldisilazane; *Azechi* col. 5, lines 35-62). Modification incorporating methyl and vinyl functionality has been held to be at once envisaged from the short list of potential modifiers.

Azechi is silent regarding the silica having a DBP value % <200 or not determinable. *Scholz* (Examples 2 and 7) show silica with a DBP value % <200; DBP is stated to be a result-effective variable, wherein higher DBP values result in an increase in thickening, and vice-versa (*Scholz* ¶ [0013]). *Azechi* and *Scholz* are analogous art in that they are drawn to the same field of endeavor, namely hydrophobically modified silicas having a BET surface area <1000 m²/g, which are used as structural reinforcements in silicone rubber resins. At the time of the invention, it would have been obvious to a person having ordinary skill in the art to utilize a hydrophobic silica with a DBP <200 % in the invention of *Azechi*, with the motivation of ensuring that the resin does not become too viscous to mold.

Regarding claim 3: The silicone rubber of *Azechi* is a liquid silicone rubber (see Title, Abstract, col. 1, lines 50-55 and viscosity measurements in Example 1).

Regarding claim 6: All examples in *Azechi* (Table 1) show 100 parts organopolysiloxane, 5 parts organohydrogen polysiloxane and 40 parts silica.

Art Unit: 1767

$40/(100+5+40) \times 100\% = 27.6\%$. This has been interpreted to be “about twenty percent”.

Alternatively, *Azechi* describes the silica filler as a result-effective variable comprising 2-80% of the composition. At the time of the invention, it would have been obvious to a person having ordinary skill in the art to optimize the content of modified silica to about 20% in *Azechi*, with the motivation of providing sufficient mechanical strength (for values on the low end of the range) while avoiding processing difficulties (for values on the high end of the range; *Azechi*, 5:63-6:3).

Regarding claim 7: *Azechi* teaches a grinding step (*Azechi* col. 7, lines 10-16) for the silanized structurally modified hydrophobic pyrogenic silica addressed in claim 1 above.

Regarding claim 8: *Azechi* teaches a heat treatment step (*Azechi* col. 7, lines 45-50) for the silanized structurally modified hydrophobic pyrogenic silica addressed in claim 1 above.

Regarding claim 9: *Azechi* shows a liquid silicone rubber with a viscosity of 10,000 centipoise (10 Pas) in the Examples (e.g. *Azechi* col. 8, lines 15-16).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,331,588 to *Azechi et al.* in view of US 2003/0195290 to *Scholz et al.*, as applied to claim 1 above, further in view of US 2002/0077412 to *Kobayashi et al.*

Regarding claim 5: The combination of *Azechi* and *Scholz* collectively teach the composition of claim 1, as set forth above.

Art Unit: 1767

Azechi is silent regarding the compact bulk density of the silica as being between 120-266 g/L. *Kobayashi* teaches silicone resins comprising silica with a bulk density of 100-300 g/L, overlapping the claimed range of 120-266 g/L with sufficient specificity. "Compacted" has been interpreted to be a product-by-process limitation, since density is a unit of measurement represented in grams per liter, and compaction is a process in achieving this density. *Azechi* and *Kobayashi* are analogous art in that they are concerned with the same technical feature, namely ensuring that silicone resins containing hydrophobically modified silica retain good processability. At the time of the invention, it would have been obvious to a person having ordinary skill in the art to compact the silica of *Azechi* to a density of 120-266 g/L, as taught in *Kobayashi*, with the motivation of ensuring flowability of the composition (*Kobayashi* ¶ [0023]), thereby achieving *Azechi*'s stated goal of avoiding unwanted thickening (*Azechi* col. 1, lines 30-35).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

Art Unit: 1767

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3 and 6-8 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 3 of U.S. Patent No. 7,563,839 in view of U.S. Patent No. 6,331,588 to *Azechi et al.* Although the conflicting claims are not identical, they are not patentably distinct from each other.

Regarding claims 1-2: *USPN '839* recites a silicone rubber containing methyl-modified hydrophobic pyrogenic silica having a surface area, as measured by BET, of 25-400 and a DBP value % <200 (*US '839* claim 3). The silica contains methyl groups affixed to its surface (*US '839* claim 3).

USPN '839 is silent regarding modification of the silica with a vinyl. *Azechi* teaches affixing both methyl and vinyl groups to the surface of silica filler materials in silicone rubber compositions (*Azechi* col. 5). *USPN '839* and *Azechi* are analogous art in that they are drawn to the same field of endeavor, namely silicone resins comprising surface-modified silica particulates. At the time of the invention, it would have been obvious to a person having ordinary skill in the art to modify the composition of *USPN '839* with a vinyl modifier, with the motivation of improving the pot life of the silica (*Azechi* col. 1, lines 40-45).

Regarding claim 3: *USPN '839* recites liquid silicone rubber (LSR; claim 3).

Regarding claim 6: *USPN '839* is silent in reciting the content of filler material. *Azechi* teaches the silica filler as a result-effective variable comprising 2-80% of the composition, with preferred values about 20%. At the time of the invention, it would have been obvious to a person having ordinary skill in the art to optimize the content of modified silica to about 20% in *USPN '839*, with the motivation of providing sufficient mechanical strength (for values on the low end of the range) while avoiding processing difficulties (for values on the high end of the range; *Azechi*, 5:63-6:3).

Regarding claims 7-8: *USPN '839* is silent regarding recitation of the claimed product-by-process steps. *Azechi* teaches a grinding step subsequent to surface modification (*Azechi* col. 7, lines 10-16) *Azechi* teaches a heat treatment subsequent to the grinding (*Azechi* col. 7, lines 45-50). At the time of the invention, it would have been obvious to a person having ordinary skill in the art to prepare the composition of *USPN '839* according to the process of *Azechi*, with the motivation of bonding the hydrophobic modifier to the silica filler (*Azechi* col. 7, lines 5-16).

Response to Arguments

The following responses are directed to the document entitled "Remarks" (pages 4-10) received May 16th, 2011.

A) Amendments correcting issues of new matter and indefiniteness have been noted. The rejection of claims 4-5 under 35 U.S.C. § 112, first paragraph and 7-8 under 35 U.S.C. § 112, second paragraph have been withdrawn. Cancellation of claim 4 has not overcome the rejection of claim 5 set forth under 35 U.S.C. § 112, fourth paragraph.

B) Applicant's arguments with respect to the rejection of claims 1-3 and 6-8 under 35 U.S.C. § 102(b) have been fully considered and are persuasive. The rejection of claims 1-3 and 6-8 under 35 U.S.C. § 102(b) has been withdrawn.

The cited *Nargiello* (USPN 6,193,795) reference (7:55-8:45) shows that certain processing conditions and silica grades are necessary to obtain the claimed DBP%; in view of the evidence, the claimed DBP% may be inherent in *Azechi* however there is not enough evidence to make a *prima facie* case of anticipation for this property since *Azechi* does not teach said silica grade or processing specifics.

C) Applicant's arguments with respect to the rejection of claims 1-3 and 6-8 under 35 U.S.C. § 103(a) as being obvious over *Azechi* (USPN 6,331,588) in view of *Scholz* (US 2003/0195290) have been fully considered but they are not persuasive.

1) Applicant's argument (page 7) that *Scholz* does not teach milling conditions that would produce a destructured product is not found to be persuasive. The instant claim language is drawn to a "structurally modified" pyrogenic silica, which is a broader term than the "destructured" silica argued by applicant (i.e., destructured appears to be a larger degree of "structurally modified"). The instant specification sets forth that a condition in making structurally modified silicas is mechanical action such as milling (specification page 3, lines 9-14). *Scholz* clearly teaches mechanical actions such as milling (found throughout *Scholz*, see e.g. ¶ [0195]). Therefore the product resulting from the process of *Scholz* has been interpreted to meet the claimed limitation "structurally modified".

The additional steps such as milling conditions and compaction using rollers is not disclosed in the instant specification, and are presumably related to a “destructuring” process argued by applicant which is also not contained in the instant specification. Therefore these limitations are not supported by the instant specification.

2) With respect to applicant’s argument that a person having ordinary skill in the art would not have had motivation to substitute the structurally modified silica filler of *Azechi* for the structurally modified silica of *Scholz*, as set forth in the previous rejection, DBP % is taught by *Scholz* to be a result effective variable wherein low values lower thickening(¶ [0013]) and result in reduced incorporation times (¶ [0124]). *Azechi* is especially concerned with excessive thickening after mixing the silica with LSR (*Azechi* Abstract). Therefore a person having ordinary skill in the art would have recognized that substituting (if the claimed DBP% is not inherent to the silicas of *Azechi*) a silica with a DBP <200 is one means of solving the specified thickening problem.

D) Applicant's arguments with respect to the rejection of claims 4-5 under 35 U.S.C. § 103(a) as being obvious over *Azechi* (USPN 6,331,588) in view of *Scholz* (US 2003/0195290) as applied to claim 1, and further in view of US 2002/0077412 to *Kobayashi et al.* have been fully considered but they are not persuasive.

With respect to applicant’s argument that a person having ordinary skill in the art would not have had motivation to substitute the structurally modified silica filler of *Azechi* for the structurally modified silica of *Kobayashi*, as set forth in the previous rejection, *Kobayashi* teaches that it is known in the art that silicas having a bulk density of 100-300 g/L promote good flowability of compositions to which they are added

(*Kobayashi* ¶ [0023]). *Azechi* is especially concerned with excessive thickening after mixing the silica with LSR (*Azechi* Abstract). Therefore a person having ordinary skill in the art would have recognized that a silica with a silica having a density within applicant's claimed range is one means of avoiding the unwanted thickening that *Azechi* is trying to avoid.

E) Applicant's arguments with respect to the rejection of claims 1-3 and 6-8 on grounds of non-statutory obviousness type double patenting over claims 1-2 of USPN 7,563,839 over *Azechi* have been fully considered but they are not persuasive.

Note: claims 6-8 were also addressed in the Action mailed 2/16/2011.

Although '839 does not contain a methyl containing silyl group affixed to the silica surface, *Azechi* teaches that the proposed modification is known to prolong pot life in the field of liquid silicone rubbers containing silica fillers (*Azechi* col. 1, lines 45-58). The invention of *Azechi* has not been interpreted to be a "selection invention" as argued by applicant, for the reasons that 7 of the 33 compounds named by *Azechi* contain the required functionalities, which has been interpreted to teach the claimed modification with sufficient specificity.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL A. SALVITTI whose telephone number is (571)270-7341. The examiner can normally be reached on Monday-Thursday 8AM-7PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1767

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. A. S./
Examiner, Art Unit 1767

/Mark Eashoo/

Supervisory Patent Examiner, Art Unit 1767